

TECH TRANSFER

Attachment D

BDEG Program January 2013

BDEG Background

Since 2006, the Colorado Bioscience Discovery and Evaluation Grant (BDEG) program has provided a pathway for state-funded, industry-vetted proof-of-concept grants to bridge the gap between university-stage biotechnology innovations showing commercial promise and significant clinical impact, and transfer of those technologies to the commercial sector for later-stage development and clinical approval. BDEG grants are relatively small (\$50-200k per award) but can be leveraged into major impact on market readiness for promising university bioscience innovations. University and taxpayer investment into these commercially promising programs is bearing fruit, and enhancing the economic footprint of the university research enterprise.

Program Snapshot: Early 2013

Since the program was launched by the State of Colorado in 2006, the TTO has received 221 proposals, sent 131 to an expert panel for review, and ultimately funded 61. Of these, 12 have been licensed (all to Colorado-based companies), while at present just 11 have been deemed nonviable. 50 of the total 61 BDEG funded projects are still active today.

221 Proposals received

131 Reviewed by industry panel

61 Proposals funded

28% Funding rate

50 Active projects*

11 Projects deemed non-viable

10 Projects currently in-progress*

12 Projects licensed/optioned*

12 Projects committed to Colorado-based companies*

2 Projects with subsequent co-development/sublicensing deals

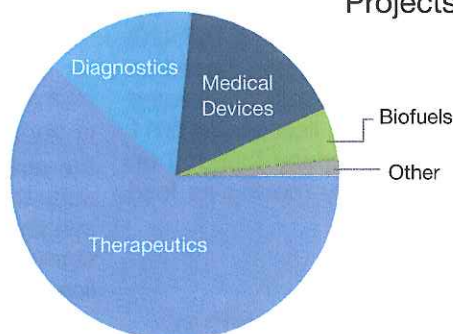
24% Licensing rate for completed grants*

\$9.7M Total BDEG funding

\$184M Total follow-on grants + investment*

\$92M Follow-on VC investment*

Projects Funded



Project Status

Top 5 Companies for VC*

OPX Biotechnologies
Sierra Neuro / ICVRx
EndoShape
OMNI Bio Pharma
Mosaic Biosciences

Top 5 Total: \$91M

*Note: data as of 1/1/13 includes 10 grants with work ongoing; these in-progress grants are excluded from licensing and investment figures. Investment figures also exclude one BDEG licensee where large financings were unrelated to the licensed technology, as well as non-equity portions of co-development deals.



University of Colorado
TECHNOLOGY TRANSFER OFFICE

BDEG Program Info

Rick Silva, Director of Tech Transfer (CU Denver|Anschutz)

rick.silva@cu.edu, 303-724-0222

cu.edu/techtransfer/proof/state.html

BDEG Project Updates

Recent Milestones

Kay Holmes & Bob Hodges (2006 award) – showed development of protective antibodies against multiple flu strains and achieved passive cross species vaccination of animals; prototype universal flu vaccine in progress.

Doug Graham (2006 award) – raised \$1.5M+ in funding from Damon Runyon and American Cancer Society; issued patent on drug composition.

Thomas Flaig (2009 award) – New company (Aurora Oncology) formed; SBIR awarded.

Todd Grazia (2010 award) – currently enrolling a pilot safety study at CU to validate pre-clinical findings.

Malik Kahook (2011 award) – showed significantly lowered intraocular pressures; reduced dependency on glaucoma drugs in a small pilot clinical trial in Mexico.

Drug Leads Advanced for Synergistic Cancer Therapies

After using a proprietary drug screen to identify anti-cancer properties in a previously-known natural compound, CU professor Tin Tin Su received BDEG awards in 2009 (\$147,420) and 2010 (\$78,668) to develop novel pharmacophores based on this compound. With the BDEG award, Dr. Su's group created optimized drug leads, which were exclusively licensed in 2011 to SuviCa, Inc. (Boulder, CO), a startup company founded on CU's intellectual property. SuviCa is currently moving its lead compounds through preclinical development.

www.suvica.com

Ophthalmic Devices Licensed to Colorado Startup, Partnered with Abbott

CU professor Malik Kahook received a BDEG award for the development of a novel shape memory polymer (SMP) device for the treatment of glaucoma called the KSCO device (Keep Schlemm's Canal Open). In 2010, Dr. Kahook received another BDEG award for the development of another SMP glaucoma drainage device; he also formed Shape Ophthalmics (Aurora, CO), which has licensed these and other SMP implantable ophthalmic technologies from CU. In 2012, Shape Op successfully closed a co-development deal with Abbott Medical Optics (AMO) to adapt this materials platform for lens technologies; this alliance has the potential to realize significant revenues for Shape Op and CU should AMO be successful in applying the Shape Op technology to their devices.

SARS Vaccine Redeveloped for Influenza, Licensed to Colorado Startup



From 2001-2003 an outbreak of the SARS virus in China led to worldwide efforts to formulate a vaccine to the disease. A research team at the CU Anschutz Medical Campus led by Drs. Kay Holmes and Robert Hodges developed a novel peptide-based vaccine for SARS. When the outbreak came to an end, the team turned their efforts to other viruses, as the same strategy used against SARS applied to a variety of other highly contagious and pathogenic viruses. In 2006, a BDEG award of \$200K was granted to the team to apply their technology to the development of a flu vaccine. This funding led to the core technology used to support the startup company PeptiVir (Aurora, CO), which received additional BDEG matching funds from the state of Colorado; the research group also received another BDEG grant to expand the technology to a third viral family, respiratory syncytial virus (RSV).

www.peptivir.com

BDEG Funding Helps Advance Solar-Thermal Energy

In 2008, CU professor Al Weimer was given a BDEG award in the amount of \$173,554 to advance technology related to the solar-thermal gasification of biological feedstocks to produce syngas. This technology was closely related to the work of CU startup Copernican Energy (Boulder, CO) and was subsequently licensed by Sundrop Fuels when it acquired Copernican Energy in 2008 to fill out its portfolio of gasification technologies. The original BDEG award has led to more than \$200M in further investment financing to Sundrop Fuels.

www.sundropfuels.com

New HDAC Inhibitor Developed by Boulder Startup

CU professor Xuedong Liu received a BDEG award in 2010 (\$78,668) to conduct structure-activity-relationship (SAR) studies and optimize a novel inhibitor of histone deacetylase (HDAC). With promising results stemming from the BDEG-funded studies, OnKure (Boulder, CO) was founded in 2011 to exclusively license and commercialize Dr. Liu's HDAC inhibitor as a new treatment for cancer. OnKure has secured private seed funding and has also received a BDEG early-stage company award from the State of Colorado (OEDIT).



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Campus Information

Rick Silva, Director
CU Denver | Anschutz Medical Campus
rick.silva@cu.edu, 303-724-0222

Kate Tallman, Director
CU Boulder + CU Colorado Springs
kate.tallman@cu.edu, 303-492-5732